Montana Department of
ENVIRONMENTAL QUALITY

WATER PROTECTION BUREAU

FORM
NOI

Notice of Intent (NOI) for Montana Pollution Discharge Elimination System Application for New and Existing Concentrated Animal Feeding Operations

The Application form is to be completed by the owner or operator of a Concentrated Animal Feeding Operation (CAFO) or Aquatic Animal Production Facility. Please read the attached instructions before completing this form. You must print or type legibly; forms that are not legible or are not complete will be returned. You must maintain a copy of the completed application form for your records.

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Planning Division

Section A - Application Status *(Check one):* MTGW 028z

- [x] New — No prior application submitted for this site.
- [ ] Resubmitted — Permit Number: MTG _____
- [ ] Renewal — Permit Number: MTG _____
- [ ] Modification — Permit Number: MTG _____

Section B - Facility or Site Information *(See instruction sheet.):*

Site Name Grass Land Colony.

Site Location Section 1 Township 18 North range 3 East.

Nearest City or Town Great Falls or Sand Coulee County Cascade

Latitude 47.340 Longitude -111-.278

Date Facility began operation? 2014

Is this facility or site located on Indian Lands? [ ] Yes [x] No

Section C - Applicant (Owner/Operator) Information:

Owner or Operator Name Grass Land Colony. by Peter Wirz (Vice Pres.)

Mailing Address 714 Eden Rd.

City, State, and Zip Code Great Falls Mt. 59405

Phone Number 406 736 - 5322.

Is the person listed above the owner? [x] Yes [ ] No

Status of Applicant *(Check one)* [ ] Federal [ ] State [x] Private [ ] Public [ ] Other (specify) _____

Section D - Existing or Pend'g Permits, Certifications, or Approv : ☒ None

☐ MPDES _____ ☐ RCRA _____

☐ PSD (Air Emissions) _____ ☐ Other _____

☐ 404 Permit (dredge & fill) _____ ☐ Other _____

Section E – Standard Industrial Classification (SIC) Codes:

Provide at least one SIC code which best reflects the activity of project described in Section H.

Code	A. Primary	Code	B. Second
1	213	2	241
Code	**C. Third**	**Code**	**D. Fourth**
3	2389	3	

Section F - Facility or Site Contact Person/Position:

Name and Title, or Position Title Peter Wurz, (Vice Pred.)

Mailing Address 714 Eden Rd.

City, State, and Zip Code Great Falls Mt. 59405

Phone Number 406 - 736 - 5322.

Section G – Receiving Surface Waters(s):

Outfall/Discharge Locations: For each outfall, List latitude and longitude to the nearest second and the name of the receiving waters

Outfall Number	Latitude	Longitude	Receiving Surface Waters
001	[illegible]		
002	47.341	-111-283	Unnamed drainage
003			
004			
005			

Map: Attach a topographic map extending one mile beyond the property boundaries or the site activity identified in Section B depicting the facility or activity boundaries, major drainage patterns, and the receiving surface waters, stated above. Also identify the specific location of the production area, and land application area(s).

Is the receiving water on the 303(d) list for nutrients (nitrogen and/or phosphorus) ☐ Yes ☒ No

Section H – Concentration Animal Feeding Operation Characteristics

Waste Production, Storage and Disposal

	Animal type	Number in Open Confinement	Number Housed Under Roof
☐	Mature Dairy Cows		
☐	Dairy Heifers	N.A	
☐	Veal Calves	↕	
☐	Cattle (not dairy or veal)		
☐	Swine (55 lbs or over)	460	
☐	Swine (55 lbs or under)		
☐	Horses		
☐	Sheep or Lambs		
☐	Turkeys		
☐	Chickens (broilers)		
☐	Chickens (layers)		
☐	Ducks	30,000	30,000
☑	Other (Specify: [illegible])	[illegible]	[illegible]
☑	Other (Specify: [illegible])	[illegible]	[illegible]
☐	Other (Specify:)		

Manure, Litter and/or Wastewater Production and Use.

How much manure, litter, and process wastewater is generated annually by the facility?

Solid (tons): 900 Ton Liquid/Slurry (gallons): N A.

If land applied, how many acres of land under control of the permit applicant are available to apply the manure, litter, or process wastewater generated from the facility? (Note: Do not include setback distances in available acreage

700 Acres

How much manure, litter, and process wastewater is transferred to other persons per year? (estimated) Solid (tons): N A - 0 Liquid/Slurry (gallons): 0

Were the containment structures built after February 2006?

☐ Do the waste containment structures have 10 feet of separation between the pond bottom and any bedrock formations?

N A.

☐ Do the waste containment structures have 4 feet of separation from the pond bottom and any ground water?

☐ Were any of the waste containment structures built within 500 feet of any existing well?

	Type of Containment/Storage	Total Capacity	Units (gallons or tons)	Days of Storage
☐	Anaerobic Lagoon			
☐	Storage Pond #1			
☐	Storage Pond #2			
☐	Storage Pond #3			
☐	Storage Pond #4			
☐	Storage Pond #5			
☐	Above Ground Storage Tank			
☐	Below Ground Storage Tank #1	NA		
☐	Below Ground Storage Tank #2			
☐	Underfloor Pits			
☐	Roofed Storage Shed			
☐	Concrete Pad			
☐	Impervious Soil Pad			
☐	Other (Specify: 100 X 250)	6 in. Berm &	filter strip. (Chicken	
☐	Other (Specify: 150 X 180)	"	" " (Cattle)	filter strips.

Physical Data for CAFO

Nutrient Management Plan

All Concentrated Animal Feeding Operations seeking permit coverage after July 31, 2007 are required to complete and implement a Nutrient Management (NMP). The NMP must be submitted to the Department using the form provided by the Department (Form NMP). Check the box below that applies and provide the required information. The NMP must be developed in accordance with ARM 17.30.1334 and implemented upon the effective date of permit coverage. (Check One)

☐ Does the facility have an NMP?
Date NMP was developed: NA

Date NMP was last modified: NA

☐ NMP has not been prepared; provide detailed explanation below

are starting up.

Section I – Supplemental Information

Section 8 - CERTIFICATION

Permittee Information:

This Form NMP must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

All Permittees Must Complete the Following Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information; including the possibility of fine and imprisonment for knowing violations. [75-5-633, MCA]

A. Name (Type or Print)

Peter Wurz

B. Title (Type or Print)

Vice Pred.

C. Phone No.

406 736 5322.

D. Signature

Peter Wurz.

E. Date Signed

Feb-16-16

The Department will not process this form until all of the requested information is supplied, and the appropriate fees are paid. Return this form (NOI) and the applicable fee to:

Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-3080

AGENCY USE ONLY				
PERMIT NO.:	Date Rec'd.:	Amount Rec'd.:	Check No.:	Rec'd By:

DEQ
Montana Department of Environmental Quality

WATER PROTECTION BUREAU

FORM
NMP

Nutrient Management Plan

READ THIS BEFORE COMPLETING FORM: Before completing this form (Form NMP), Concentrated Animal Feeding Operation (CAFO) operators need to read the General Permit, particularly Part IV.A. CAFO operators also need to read the "Instructions For filling out Form NMP," found at the back of this form. Form NMP is intended to help CAFO operators develop a site-specific Nutrient Management Plan, in compliance with Part IV.A of the General Permit and all applicable State rules and statutes. Your Nutrient Management Plan must be maintained at the site as required in Part III of the General Permit. Sections B and C on your Form NMP must state the information exactly the same way as it was stated on the most recently submitted version of your NOI-CAFO. Attach additional pages as necessary, indicating the corresponding section number on this NMP form. The 2013 General Permit, current fee schedule, and related forms are available from the Water Protection Bureau at (406) 444-3080 or http://www.deq.mt.gov/wqinfo/MPDES/CAFO.asp

Section A – NMP Status:

√ (New)	No prior NMP submitted for this site.
Resubmitted	Previous NMP found incomplete.
Modification	Change or update to existing NMP.
New 2013	New 2013 version of NMP.

Section B – Facility Information:

Facility Name Grass Land Colony.

Facility Location Section 1 Township 18 North Range 3 East.

Nearest City of Town Sand Coulee County Cascade

Section C – Applicant (Owner/Operator Information):

Owner or Operator Name Grass Land Colony.

Mailing Address 714 Eden Rd.

City, State, and Zip code Great Falls MT. 59405

Facility Phone Number 406-736 5322.

Email chicken.grl@Colony MT. Com.

Section D – NMP Minimum Elements:

1. Livestock Statistics		
Animal Type and number of animals	# of Days on Site (per year) 365 .15 lb.	Annual Manure Production (tons, cu. yds. or gal
1. 30,000 chicken's		800 ton dry
2. 15,000 chick's	280 .04 lb.	100 ton dry
3. 400 cows.	A 35 days	100 ton dry
4.		
5.		
6.		
7.		
8.		

Method used for estimating annual manure production:

~~.04 chick~~ ~~.15 chicken's~~: AE H 9 Page 12-14

2. Manure Handling

a. Describe Manure handling at the facility:

conveyer to truck then stock piled. Spreader truck to field.

b. Frequency of Manure Removal from confinement areas:

evry 3 day's

c. Is this manure temporarily stored in any location other than the confinement area? Yes No
If so then how and where? pile on ground ~~&~~ stock pile. 1/2 mile north of chicken house. 6 in Brem around

d. Is manure stored on impervious surface? Yes (No)
If yes, describe type and characteristics of this surface: no.

cattle only 35 day confinement

3. Waste Control Structures

Waste Control Structures (name/type)	Length (ft.)	Width (ft.)	Depth (ft.)	Volume (cubic ft. or gallons)	Number of days of storage
1. ~~Cattle~~	150	180	~~1 ft~~	~~Pasture~~ + filter strip	
2. chicken	150 filter	250 strip	6 in	2 "	"
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

What is the 24 hr. 25 yr. storm event at this facility ~~N A~~ 3 in - 24 hr 25 year?

Production area: ~~N A~~ acres. Type of lot (dirt or paved): ~~N A~~ dirt

Area contributing drainage form outside CAFO that enters confinement areas and waste storage, conveyance, or treatment structures: ~~N A~~ 0 acres.

What is the annual precipitation during the critical storage period ~~N A~~ or (14 inches) annual) 4 inches - 180 days.

How much freeboard do the pond(s) have N A

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4. Disposal of Dead Animals.

Describe how dead animals are disposed of at this facility:

compost in stock Pile

5. Clean Water Diversion Practices

Describe how clean water is diverted from production area: N/A. gutter at chicken house. (Berm around filter strip). (Berm around stock pile

6. Prohibiting Animals and Wastes from Contact with State Waters

Describe how animals and wastes are prohibited from direct contact with state waters: ~~N/A~~ Fences + Building.

Describe how Chemicals and other contaminants are handled on-site: ~~N/A~~ · We don't have chemicals being our chicken's are organic. (disposed per manufatures recomdations)

7. Best Management Practice (BMPS)

Describe in detail all temporary, permanent and structural BMPS which will be used to control runoff of pollutants from facility's production area. Indicate the location of these measures. If BMPS are not installed include a schedule for implementation of each of these measures. Examples of BMP measures could include but are not limited to: constructing ditches, terraces,, and waterways above and open lot to divert clean water run on; installing gutters, downspouts and buried conduits to divert roof drainage; providing more roofed area: decreasing open lot surface area; repairing of adjusting water systems to minimize water wastage; using practical amounts of water for cooling purposes; recycling water if practical and applicable.

Production Area BMP's ~~N/A~~ ditches + Berms

Describe in detail all temporary, permanent and structural Best Management Practices (BMPs) which will be used to control runoff of pollutants from facility's land production area. Indicate the location of these practices. If not already in use, include a schedule for implementation of each of these measures. Attached details and specifications may be used to supplement this description. Examples of BMP measures could include but are not limited to: maintaining setbacks from surface waters for manure applications; managing irrigation practices to prevent ponding of wastewater on land application sites; never spray irrigating waste on to frozen ground: consulting with the Department prior to applying any liquid waste to frozen or snow-covered ground; applying wastes at agronomic rates.

Land Application BMP's We don't apply only in the summer months. (don't apply when frozen)

Buffers	Yes	No	Conservation Tillage	Yes	No
Constructed Wetlands	Yes	No	Grass Filter	Yes	No
Infiltration Field	Yes	No	Residue Management	Yes	No
Set backs	Yes	No	Terrace	Yes	No

Other examples N A

8. Implementation, Operation, Maintenance and Record Keeping – Guidance

The permittee is required to develop guidance addressing implementation of NMP, proper operation and maintenance of the facility, and record keeping as described in Part 2 of the permit.

Has a guidance document been developed for the facility? Yes No

We are orangie so we have to keep record daily. for the Chicken's

Certify the document address the following requirements:

Implementation of the NMP:	Yes ✓	No
Facility operation and maintenance:	Yes ✓	No
Record keeping and reporting	Yes ✓	No
Sample collection and analysis:	Yes ✓	No
Manure transfer	Yes ✓	No

Provide name, date and location of most recent documentation:

Kept on Site.

If your answer to any of the above question is no, provide explanation:

Section E – Land Application

Will manure be land applied to land either owned, rented, or leased by the owner or operator of the facility?

Yes If yes, then the information requested in Section E must be provided.

No If no, then provide an explanation of how animal waste at this facility are managed.

We Will Spread

Photos and/or Maps

Attach an aerial photograph or map of the site where manure is to be applied. (Use multiple photos/maps if necessary to show required details.) The photo(s)/map(s) must be printed on no larger than an 11"X 17" piece of paper, and must clearly identify the following items:

- Individual field boundaries for all planned land application areas Field's
- A name, number, letter or other means of identifying each individual land application field ✓
- The location of any downgradient surface waters. ✓
- The location of any downgradient open tile line intake structures ✓
- The location of any downgradient sinkholes ✓
- The location of any downgradient agricultural well heads ✓
- The location of all conduits to surface waters ✓
- The specific manure/waste handling or nutrient management restrictions associated with each land application field ✓
- The soil type(s) present and their locations within the individual land application field(s) NRC
- The location of buffers and setbacks around state surface waters, well heads, etc. ✓

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Land Application Equipment Calibration

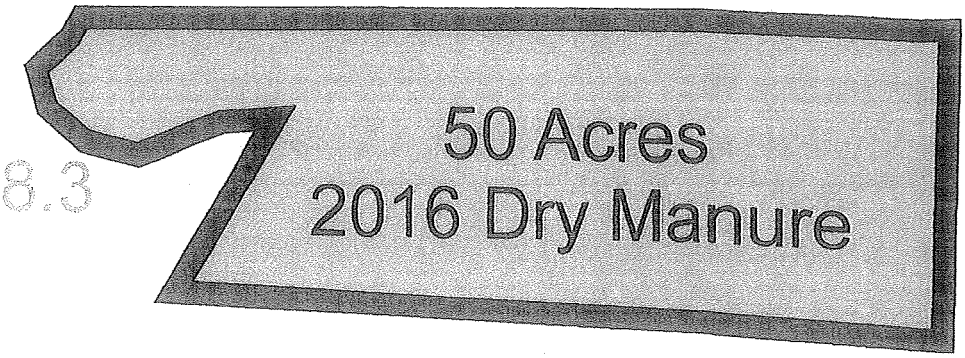
Describe the type of equipment used to land apply wastes and the calibration procedures:

20 Ton Spreader truck.
Weigh load then distance travel at 40 ft

Manure Sampling and Analysis Procedures

A representative manure sample will be analyzed a minimum of once annually for Total Nitrogen, and Total Phosphorus. Analysis results will be reported in lbs/ton or lbs/1,000 gal. Results of these analyses will be used

Grassland Colony
Manure Map 2016



1.2

20.9

18.3

40.5

25.4

212.0

21.6

95.9

4.8

15.7

1.1

5.5

1

18N 3E

in determining rates for manure, litter, and process wastewater.
Manure Sample collection will occur according to ARM 17.30.1334

Other (describe) _____

_____

Soil Sampling and Analysis Procedures
Representative soil (composite) samples from the top 6 inches layer of soil for each field where manure will be applied must be analyzed for phosphorus content at least once every three years. Analyses will be conducted by a qualified laboratory, using the Olsen P test. Results will be reported in parts per million (ppm) and will be used in determining application rates for manure, litter, and process wastewater

Soil samples collection will occur according the methods in ARM 17.30.1334

Other (describe) _____

_____

Phosphorus Risk Assessment
The permittee shall access the risk of phosphorus contamination of state waters. An assessment shall be conducted for each field, under the control of the operator, to which manure, litter or process wastewater will or may be applied. If a new field is added in the future, then the permittee must submit a revised (modified) NMP. The permittee has the option of using Method A or Method B (below) to complete the assessment. Copies of all tables and calculations used to complete the assessments, as well as the results of the assessments, shall be submitted to the Department and copies shall be maintained on-site at the facility and available for Departmental review. The results of the assessments shall be used to determine the appropriate basis for land application of wastes from the facility.

Method Used
Indicate which method will be used to determine phosphorus application:
Method A – Representative Soil Sample
Method B – Phosphorus Index

Method A – Representative Soil Sample
a. Obtain one or more representative soil sample(s) from the field per 17.30.1334
b. Have the sample analyzed for Phosphorus by a qualified lab. The "Olsen P test" must be used for the analysis, and the result must be reported in parts per million (ppm)
c. Using the results of the Olsen P test, determine application basis according to the Table below.

Soil Test

Olsen P Soil Test Results (ppm)	Application Basis
<25.0	Nitrogen Needs of Crop
25.1 - 100.0	Phosphorus Needs of Crop
100.0 – 150.0	Phosphorus Needs up to Crop Removal Rate
>150.0	No Application allowed

Method B – Phosphorus Index
a. Complete a phosphorus Index according to the crop grown on each field. Complete table in Appendix A to calculate phosphorus index. For information on filling out specific sections in Appendix A, please refer to the method as described in Natural Resource Conservation Service (NRCS), Agronomy

Grassland Colony.

plication Data-Narrative approach

llowing must be filled out for each field to which manure, litter or process wastewater will or may be d for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. **Fields identical crops and soil types may be grouped together.** Barley +

ops and Manure Barley + Malt Barley Field 3 ~~5 6 4~~

ield Name and spreadable acres for each (for fields with identical crops and soils type):

rop 1 (year 1 or ?) plant species	Barley + Malt Barley
rigated (Y/N)	no
ield Goal (ton/ac or bushel/ac)	30
Content of soil as nitrate (lbs/acre or ppm)	30
Content of soil as P_2O_5 (lbs/acre or ppm)	50
me of Year When Application will Occur (month)	April to Oct.
pplication frequency (per year by month)	April to Oct.
rm of manure (liquid/solid)	~~Liquid~~ + Solids
ethod of Application	Spreader Truck
manure incorporated or broadcast?	Both.
equency of Application (yearly, biannual, etc.?)	Yearly.
op 2	
igated (Y/N)	
eld Goal (ton/ac or bushel/ac)	
Content of soil as Nitrate (lbs/acre or ppm)	
Content of soil as P_2O_5 (lbs/acre or ppm)	
me of Year When Application will Occur (month)	
plication frequency (per year, by month)	
rm of manure (liquid/solid)	
ethod of Application	
manure broadcast, injected or incorporated?	
equency of Application (Annual, Biannual, ,etc?)	

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **GRASSLAND WEST**
SAMPLE ID
FIELD NAME
COUNTY
TWP RANGE 320
SECTION QTR ACRES **0**
PREV. CROP **Wheat-Winter**

N / W / E / S

SUBMITTED FOR:
GRASSLAND COLONY

SUBMITTED BY: **AG4715**
AGRIBASICS
4500 18TH AVE N
PO BOX 6949
GREAT FALLS, MT 59406

REF # **18743753** BOX # **0**
LAB # **NW4589**

Date Sampled **02/05/2016** Date Received **02/09/2016** Date Reported **2/16/2016**

Nutrient In the Soil			Interpretation: VLow	Low	Med	High
itrate	0-6"	11 lb/ac				
	6-24"	24 lb/ac				
	24-36"	16 lb/ac	*******	*		
	0-24"	35 lb/ac				
nosphorus	Olsen	21 ppm	******	******	******	******
otassium		229 ppm	******	******	******	******
nloride	0-24"	8 lb/ac	***			
lfur	0-6"	8 lb/ac	*******			
	6-24"	18 lb/ac	******	*******		
oron		0.5 ppm	*******			
nc		7.27 ppm	******	******	******	******
on		50.9 ppm	******	******	******	******
nganese		4.8 ppm	******	******	******	******
pper		1.17 ppm	******	******	******	*
gnesium		169 ppm	******	******	***	
lcium		5082 ppm	******	******	******	******
dium		13 ppm	**			
.Matter		2.8 %	******	*****		
bonate(CCE)		4.1 %	******	******	****	
Salts	0-6"	0.3 mmho/cm	*******			
	6-24"	0.3 mmho/cm	*******			

	1st Crop Choice		2nd Crop Choice			3rd Crop Choice		
	Barley-Malting							
	YIELD GOAL		YIELD GOAL			YIELD GOAL		
	50 BU							
	SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	Broadcast							
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N	43		N			N		
P_2O_5	15	Band (Starter)*	P_2O_5			P_2O_5		
K_2O	10	Band (Starter)*	K_2O			K_2O		
Cl	32	Broadcast	Cl			Cl		
S	20	Broadcast	S			S		
B	0		B			B		
Zn	0		Zn			Zn		
Fe	0		Fe			Fe		
Mn	0		Mn			Mn		
Cu	0		Cu			Cu		
Mg	0		Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range) % Ca	% Mg	% K	% Na	% H
0-6" 7.2 6-24" 7.7		27.5 meq	(65-75) 92.5	(15-20) 5.1	(1-7) 2.1	(0-5) 0.2	(0-5)

ieral Comments: Fine Loams (CEC range 21 to 30) (Medium)
p 1: 70 lbs of 0-0-60 = 32 lbs of Chloride" * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on
n soil tests. Crop Removal: P2O5 = 24 K2O = 25 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Technical Note MT-77 (rev3), January 2006.

b. Using the calculated Total Phosphorus Index Value, assign the overall site/field vulnerability to phosphorus loss according to the table below.

Total Phosphorus

Total Phosphorus Index Value	Site Vulnerability to Phosphorus Loss
<11	Low
11-21	Medium
22-43	High
>43	Very High

c. Using the calculated Site Vulnerability to Phosphorus Loss, determine the appropriate application basis according to the table below.

Site Vulnerability to Phosphorus Loss	Application Basis
Low	Nitrogen Needs
Medium	Nitrogen Needs
High	Phosphorus Need Up to Crop Removal
Very High	Phosphorus Crop Removal or No Application

The applicant has 2 ways in which to report how manure or process wastewater application rates can be reported to DEQ.

1. **Linear Approach**. Expresses rates of application as pounds of nitrogen and phosphorus. CAFOs selecting the linear approach to address rates of application must include in the NMP submitted to the permitting authority the following information for each crop, field, and year covered by the NMP, which will be used by the permitting authority to establish site-specific permit terms:

- The maximum application rate (pounds/acre/year of nitrogen and phosphorus) from manure, litter, and process wastewater.
- The outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field. [If a state does not have an N transport risk assessment, the NMP must document any basis for assuming that nitrogen will be fully used by crops.] The CAFO must specify any conservation practices used in calculating the risk rating.
- The crops to be planted or any other uses of a field such as pasture or fallow fields.
- The realistic annual yield goal for each crop or use identified for each field.
- The nitrogen and phosphorus recommendations from in ARM 17.30.1334 (technical standard) for each crop or use identified for each field.
- Credits for all residual nitrogen in each field that will be plant-available.
- Consideration of multi-year phosphorus application. For any field where nutrients are applied at a rate based on the crop phosphorus requirement, the NMP must account for single-year nutrient applications that supply more than the crop's annual phosphorus requirement.
- All other additions of plant available nitrogen and phosphorus (i.e., from sources other than manure, litter, or process wastewater or credits for residual nitrogen).
- The form and source of manure, litter, and process wastewater to be land-applied.
- The timing and method of land application. The NMP also must include storage capacities needed to ensure adequate storage that accommodates the timing indicated.
- The methodology that will be used to account for the amount of nitrogen and phosphorus in the manure, litter, and wastewater to be applied.
- Any other factors necessary to determine the maximum application rate identified in accordance with this

Linear Approach.

2. **Narrative Rate Approach**. Expresses a narrative rate of application that results in the amount, in tons or gallons, of manure, litter, and process wastewater to be land applied. CAFOs selecting the narrative rate approach to address rates of application must include in the NMP submitted to the permitting authority the following information for each crop, field, and year covered by the NMP, which will be used by the permitting authority to establish site-specific permit terms:

- The maximum amounts of nitrogen and phosphorus that will be derived from all sources of nutrients (pounds/acre for each crop and field).
- The outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field. The CAFO must specify any conservation practices used in calculating the risk rating.
- The crops to be planted in each field or any other uses of a field such as pasture or fallow fields, including alternative crops if applicable. Any alternative crops included in the NMP must be listed by field, in addition to the crops identified in the planned crop rotation for that field.
- The realistic annual yield goal for each crop or use identified for each field for each year, including any alternative crops identified.
- The nitrogen and phosphorus recommendations from ***[the permitting authority to specify acceptable sources]*** for each crop or use identified for each field, including any alternative crops identified.
- The methodology (including formulas, sources of data, protocols for making determination, etc.) and actual data that will be used to account for: (1) the results of soil tests required by Parts II.A.4.b and III.A.3.g of this permit, (2) credits for all nitrogen in the field that will be plant- available, (3) the amount of nitrogen and phosphorus in the manure, litter, and process wastewater to be applied, (4) consideration of multi-year phosphorus application (for any field where nutrients are applied at a rate based on the crop phosphorus requirement, the methodology must account for single-year nutrient applications that supply more than the crop's annual phosphorus requirement), (5) all other additions of plant available nitrogen and phosphorus to the field (i.e., from sources other than manure, litter, or process wastewater or credits for residual nitrogen), (6) timing and method of land application, and (7) volatilization of nitrogen and mineralization of organic nitrogen.
- Any other factors necessary to determine the amounts of nitrogen and phosphorus to be applied in accordance with the Narrative Rate Approach.
- NMPs using the Narrative Rate Approach must also include the following projections, which will not be used by the permitting authority in establishing site-specific permit terms:

i. Planned crop rotations for each field for the period of permit coverage.
ii. Projected amount of manure, litter, or process wastewater to be applied.
iii. Projected credits for all nitrogen in the field that will be plant-available.
iv. Consideration of multi-year phosphorus application.
v. Accounting for other additions of plant-available nitrogen and phosphorus to the field.
vi. The predicted form, source, and method of application of manure, litter, and process wastewater for each crop

- If the receiving water is on the 303(d) list for nutrients then the narrative rate approach must be used.

a. For the Linear Approach the permittee will complete the Nutrient Budget Worksheet, below, for the next 5 years to which manure or process waste water is or may be applied. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

Section F - CERTIFICATION

Permittee Information: This form must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

All Permittees Must Complete the Following Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information; including the possibility of fine and imprisonment for knowing violations. [75-5-633, MCA]

A. Name (Type or Print)	
Peter Wurz.	
B. Title (Type or Print)	C. Phone No.
Vice Pred.	406-736-5322
D. Signature	E. Date Signed
Peter Wurz.	Feb 16 - 2016

The Department will not process this form until all of the requested information is supplied, and the appropriate fees are paid. Return this form and the applicable fee to:

Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-3080

Nutrient Budget Worksheet

Field identification: No 1 Year: 2016 Crop: Barley

Expected Crop Yield: 70

Phosphorus index results or Phosphorus application from soil test: less then 25

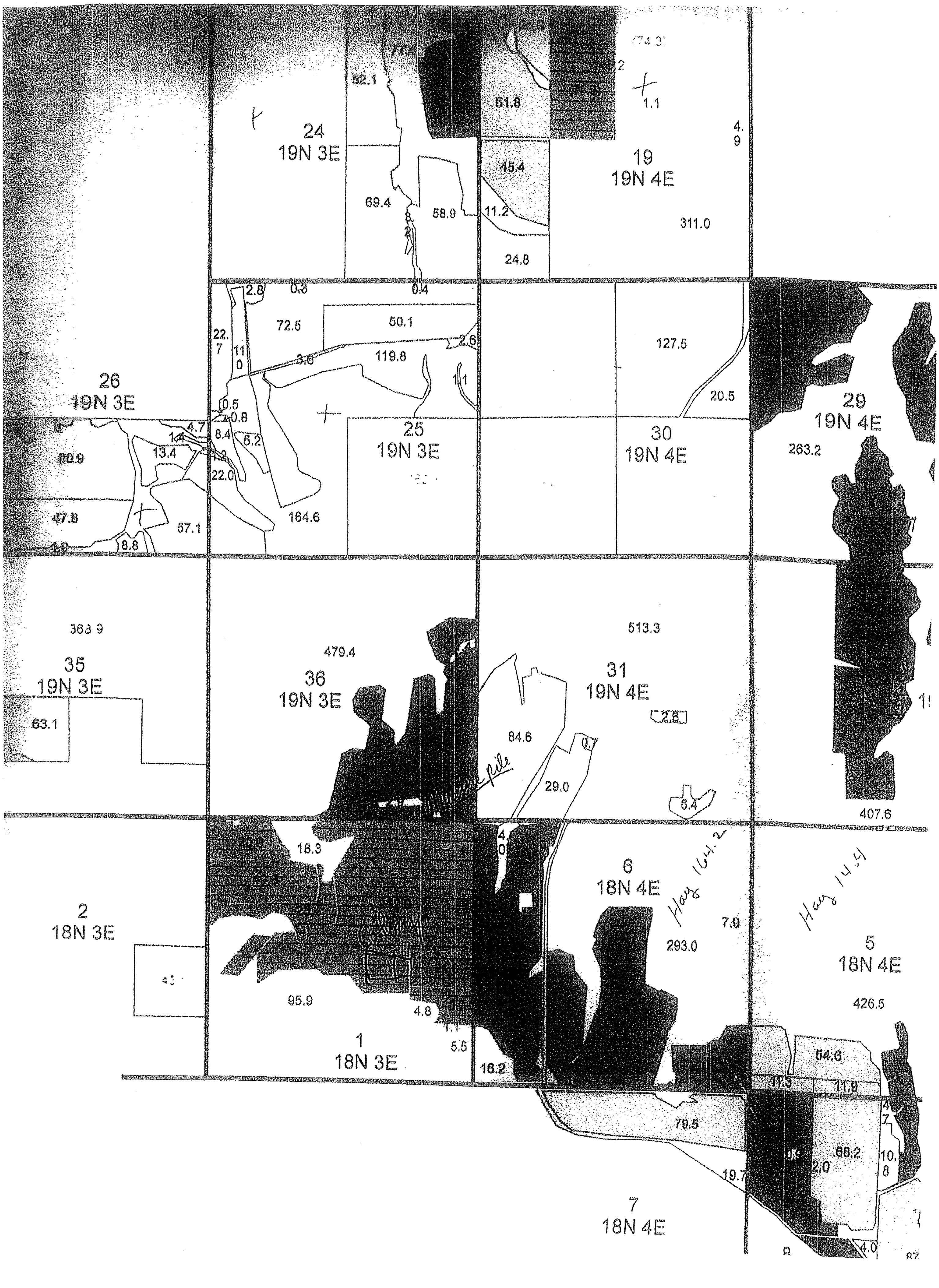
Method of Application: Spreader truck plowed under within 12 hr.

When will application occur: April to Oct.

		Nutrient Budget	Nitrogen-based Application	Phosphorus-based Application	Source of information
1		Crop Nutrient Needs, lbs/acre	84		EB 161
2	(-)	Credits from previous legume crops, lbs/ac	0		
3	(-)	Residuals from past manure production lbs/acre	0		
4	(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre	15		
5	(-)	Nutrients supplied in irrigation water, lbs/acre	0		
6		**= Additional Nutrients Needed, lbs/acre**	69		
7		Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1000 gal (from manure test)	9		information from New Elm Colony (enclosed) will get our own soon.
8	(x)	Nutrient Availability factor, for Phosphorus based application use 1.0	.7		
9		**= Available Nutrients in Manure, lbs/ton or lbs/1000 gal**	6.3		
10		Additional Nutrients needed, lbs/acre (calculated above)	69		
11	(/)	Available Nutrients in Manure, lbs/ton or lbs/1000 gal (calculated above)	6.3		
12		**= Manure Application Rate, tons/acre or 1000 gal/acre**	10.9		

RECEIVED
2016
DEQ WATER QUALITY DIVISION

Comments:


24
19N 3E
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31
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18N 3E
1
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6
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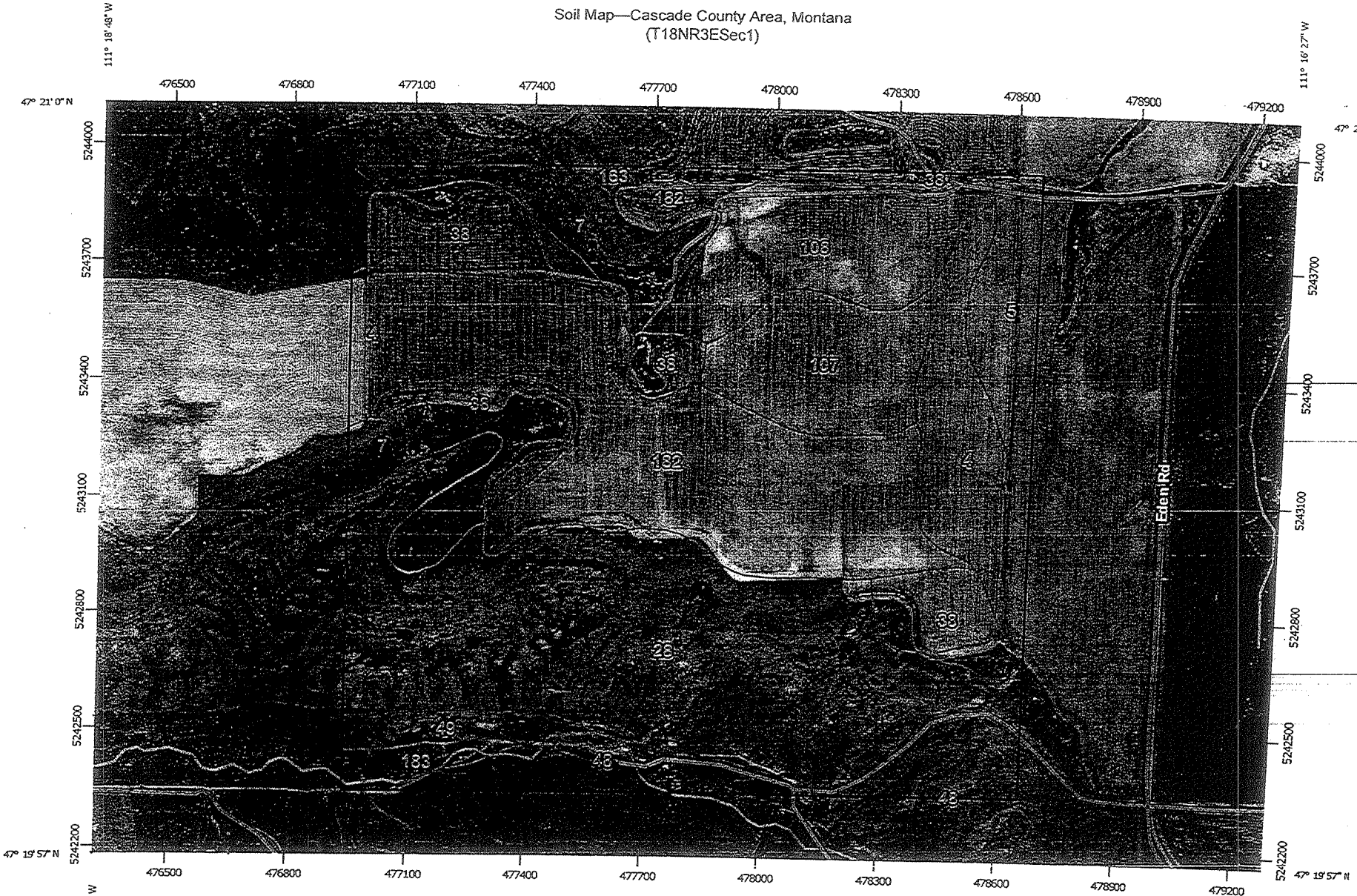
5
18N 4E
7
18N 4E
52.1
51.8
1.1
45.4
69.4
58.9
11.2
311.0
24.8
72.5
50.1
119.8
127.5
20.5
263.2
164.6
57.1
13.4
22.0
8.8
47.8
479.4
513.3
84.6
29.0
6.4
407.6
63.1
18.3
95.9
4.8
5.5
16.2
293.0
7.9
426.5
54.6
11.3
11.9
79.5
68.2
19.7
Hay 164.2
Hay 14.4

Map Unit Legend

Cascade County Area, Montana (MT613)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
4	Absarokee clay loam, 0 to 4 percent slopes	53.4	7.8%
5	Absarokee clay loam, 4 to 8 percent slopes	25.7	3.8%
7	Absarokee, Borky, and Blythe soils, 15 to 45 percent slo pes	34.7	5.1%
28	Bitton and Roy soils, 10 to 65 percent slopes	204.8	30.0%
38	Castner-Sinnigam complex, 2 to 15 percent slopes	85.8	12.6%
48	Darret silty clay loam, 8 to 20 percent slopes	24.8	3.6%
49	Darret-Castner complex, 2 to 8 percent slopes	10.0	1.5%
107	Ipano-Ticell loams, 0 to 4 percent slopes	39.8	5.8%
108	Ipano-Ticell loams, 4 to 10 percent slopes	54.6	8.0%
163	Reeder variant silt loam, 0 to 4 percent slopes	0.9	0.1%
182	Sinnigam loam, 0 to 4 percent slopes	140.1	20.5%
183	Straw loam	8.0	1.2%
Totals for Area of Interest		682.4	100.0%

Soil Map—Cascade County Area, Montana
(T18NR3ESec1)



Map Scale: 1:13,600 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 200 400 800 1200

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

USDA Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cascade County Area, Montana
Survey Area Data: Version 12, Sep 28, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 13, 2010—Aug 26, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Down To Earth Labs Inc.

The Science of Higher Yields

Old Elm Colony
Box 220
Magrath, AB T0K 1J0

Report # : 14508
Report Date: 2015-03-31
Received: 2015-03-27
Completed: 2015-03-31
Test Package: M1 Solid

Project:
PO:
Grower:
Field:
Animal: Poultry

3510 6th Ave No
Lethbridge, AB T1H 5(
403-328-11
www.downtoearthlabs.cc
info@downtoearthlabs.cc

Sample ID	Type	Analysis	Dry Basis Result	Wet Basis Result	Units	Metric Units kg/tonne	Imperial Units #/ton
150327J031 Manure (Chicken)	Manure, Solid	Moisture	19.3	19.3	%		
		Dry Matter	80.7	80.7	%		
		Total Nitrogen	3.14	2.5	%	25	50
		K2O	1.05	0.85	%	8.5	17
		Potassium	0.88	0.71	%	7.1	14.2
		P2O5	2.52	2	%	20	40
		Phosphorous	1.10	0.89	%	8.9	17.8
		Sulfur	0.29	0.23	%	2.3	4.6
		N-P-K-S		2.5-2-0.9-0.2			

Approved by

Raygan Boyce, Lab Manager